

Appl. No. 10/707,161
Amdt. Dated Jan. 26, 2006
Reply to Office Action of Nov. 3, 2005

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A broadband light source comprising:
a pump laser for producing a pump light;
a lanthanide series element-doped fiber having a predetermined length which can achieve light amplification by stimulated radiation;
a wavelength division multiplexer (WDM) device with at least three ports, first and second ports of said three ports respectively connecting with the pump laser and said fiber; and
a first optical isolator and a second optical isolator, the first optical isolator connecting with a third port of the WDM device, the second optical isolator connecting with said fiber, the first and second optical isolators being located in an output passing of the broadband light source for reducing reflection of output light;
wherein the pump light is coupled to said fiber by the WDM device, the pump light is amplified by said fiber, a part of the amplified light passes through the second optical isolator and is exported, and a remaining part of the amplified light is coupled to the first isolator by the WDM device and is exported via an output end of the first isolator.

Claim 2 (original): The broadband light source as described in claim 1, wherein said fiber is an erbium-doped fiber.

Claim 3 (original): The broadband light source as described in

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claim 2, wherein the erbium-doped fiber's predetermined length is such that the first and second optical isolators can achieve a same output optical power.

Claim 4 (original): The broadband light source as described in claim 1, wherein said fiber's predetermined length is such that the first and second optical isolators can achieve a same output optical power.

Claim 5 (original): The broadband light source as described in claim 1, wherein the pump laser comprises a laser diode emitting light having a wavelength of 980 nm.

Claim 6 (currently amended): A broadband light source comprising:
a pump laser for producing a pump light;
an erbium-doped fiber having a predetermined length;
a wavelength division multiplexer (WDM) device with at least three ports, first and second ports of said three ports respectively connecting with the pump laser and the erbium-doped fiber; and

a first optical isolator and a second optical isolator, the first optical isolator connecting with a third port of the WDM device, the second optical isolator connecting with the erbium-doped fiber, the first and second optical isolators being located in an output passing of the broadband light source for reducing reflection of output light;

wherein the pump light is coupled to the erbium-doped fiber by the WDM device, the pump light is amplified by the erbium-doped fiber, a part of the amplified light passes through the second optical isolator and is exported, and a remainder of the amplified light is coupled to the first isolator by the WDM device and is exported via an output end of the first isolator.

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Claim 7 (canceled)

Claim 8 (new): The broadband light source as described in claim 6, wherein the power of the light output to the first output end is identical to the power of the light exported from the second output end.

Claim 9 (new): A broadband light source comprising:
a pump laser for producing a pump light;
a lanthanide series element-doped fiber having a predetermined length;

a wavelength division multiplexer (WDM) device with at least three ports, first and second ports of said three ports respectively connecting with the pump laser and the doped fiber;

a first optical isolator and a second optical isolator, the first optical isolator connecting with a third port of the WDM device, the second optical isolator connecting with the doped fiber, the first and second optical isolators being located in an output passing of the broadband light source for reducing reflection of output light;

wherein the pump light is coupled to the doped fiber by the WDM device, the pump light is amplified by the doped fiber, a forward amplified light passes through the second optical isolator and is exported, a backward amplified light is coupled to the first isolator by the WDM device and is exported via an output end of the first isolator, and the predetermined length of the doped fiber is such that the first and second optical isolators can achieve a same output optical power.

Claim 10 (new): The broadband light source as described in claim 9, wherein the light exported from the first and second isolators has a

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wavelength of 1550 nm.

Claim 11 (new): The broadband light source as described in claim 9,
wherein the doped fiber is a praseodymium-doped fiber.

Claim 12 (new): The broadband light source as described in claim 9,
wherein the doped fiber is an erbium-doped fiber.